



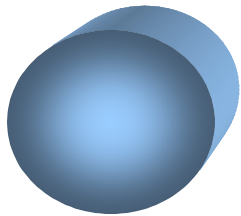
Regional Broadband Solutions

Improved Municipal Services
And
Economic Development Tools

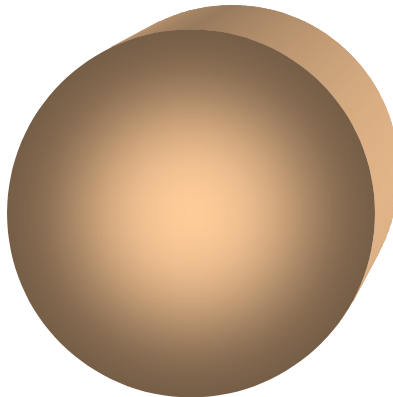


The Optical Network – Putting it all into perspective

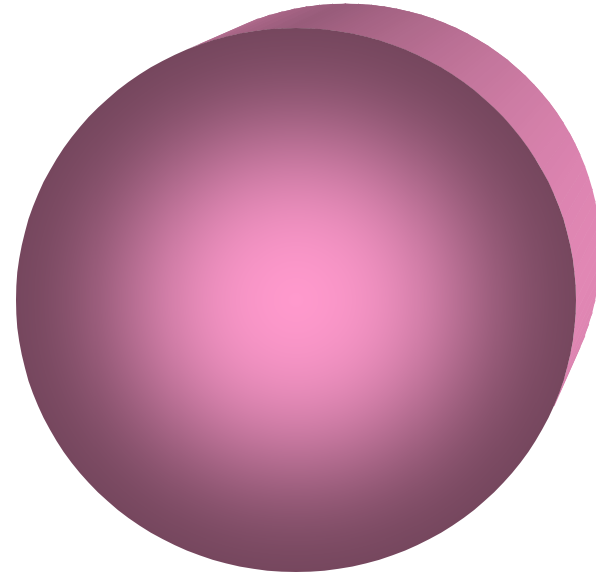
All fiber isn't created equal.
Each example below utilizes 2 strands of fiber



Last Mile
Single customer



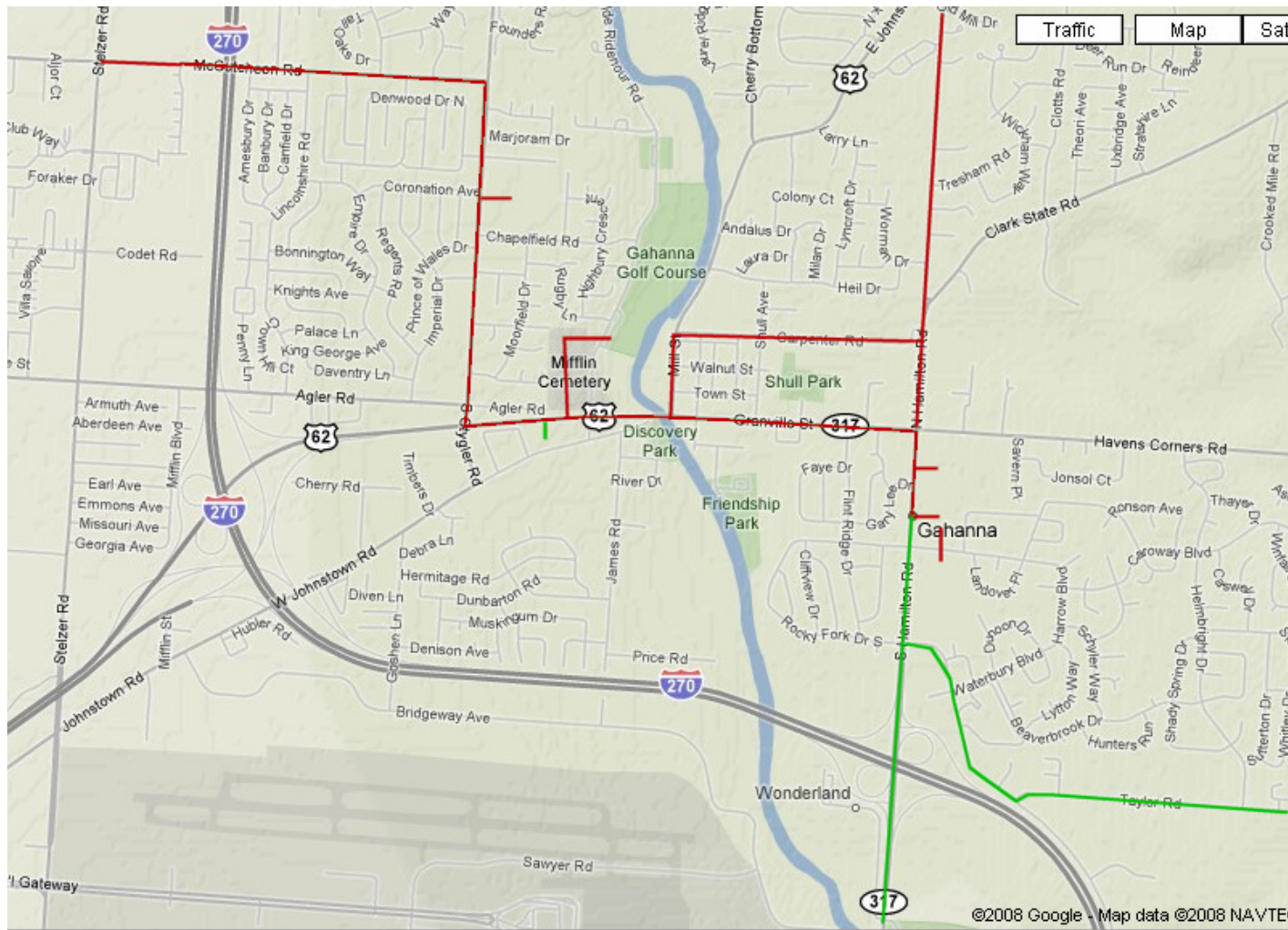
Middle Mile
Hundreds of customer's



First Mile
Tens of Thousands of customer's



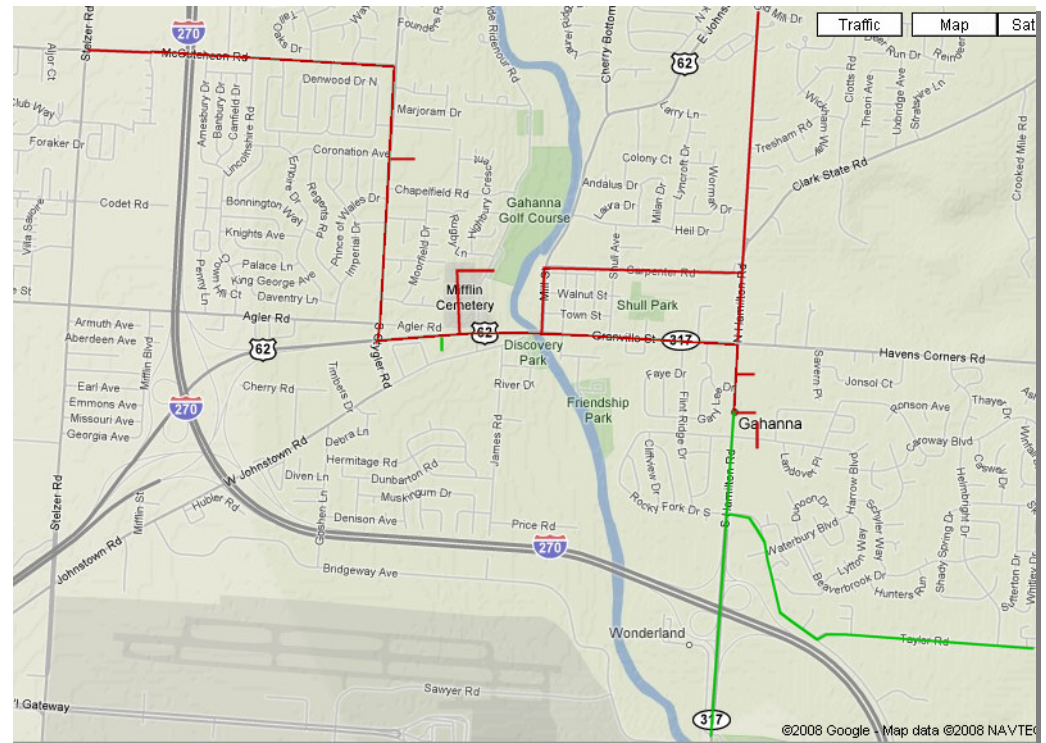
GahannaNet – The Last Mile





GahannaNet – The Last Mile

- Gahanna fiber network
 - Internal fiber network
 - Shared with municipal partners
 - schools and township
 - Delivers internal official communication service
 - Future economic development tool



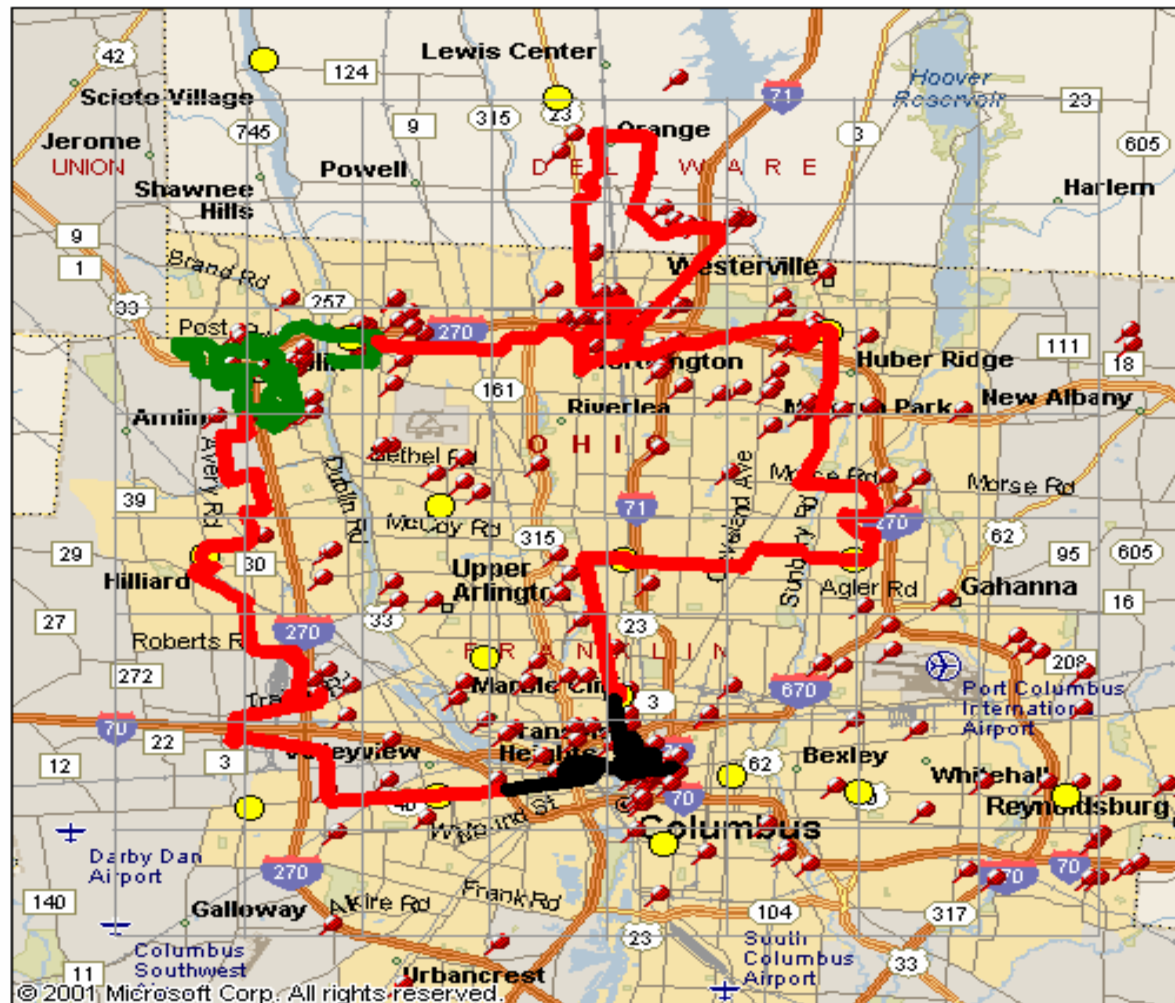
Existing and in-process Fiber



Future Fiber Placement



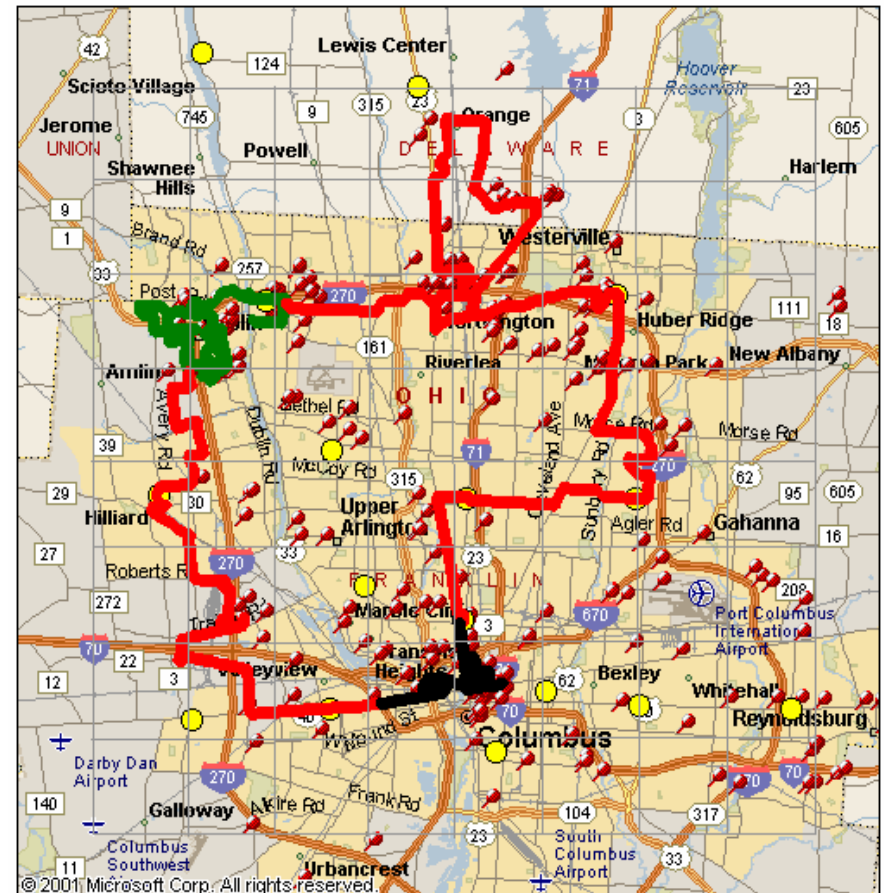
Columbus FiberNet – The Middle-Mile





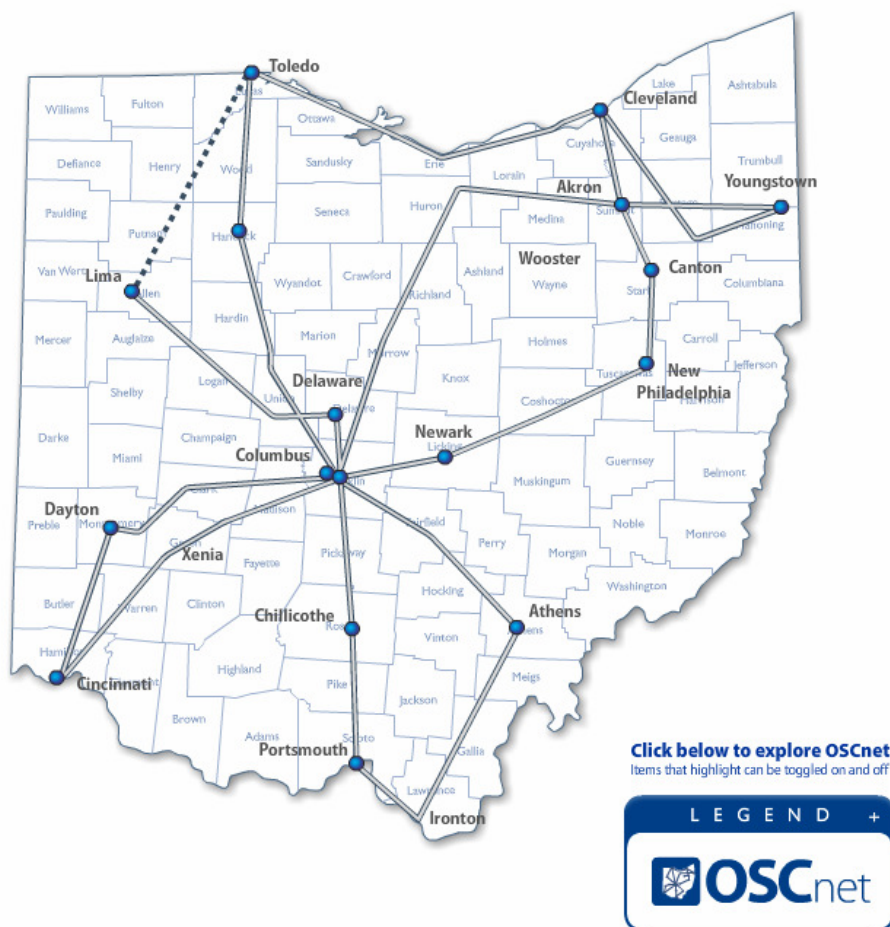
Columbus FiberNet – The Middle-Mile

- Columbus FiberNet duct and fiber
 - Green – DubLink
 - Red - CFN





OSCnet – The First Mile Backbone Facilities





OSCnet – The First Mile

- OSCnet is a dedicated high-speed fiber-optic network that serves K-12, colleges and universities, hospitals and public broadcasting.
- More than 1,850 miles of fiber create the network backbone, making it the most advanced, statewide research and education network in the nation.



Click below to explore OSCnet
Items that highlight can be toggled on and off



POP

Physical locations or “presences” for network access that usually involve a switch or router to direct network traffic over long distances.



Click below to explore OSCnet
Items that highlight can be toggled on and off





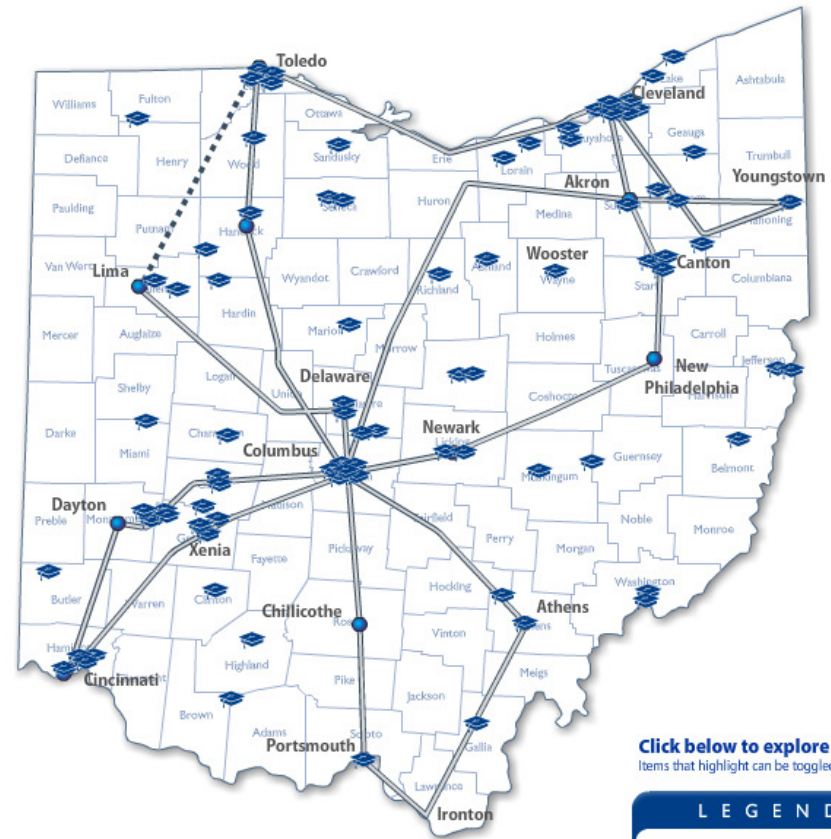
OSCnet – The First Mile

Higher Ed.



Higher Education Institutions

Ohio's public and private 2- and 4-year colleges and universities and academic medical centers access OSCnet to meet myriad learning, administrative and research needs.





OSCnet – The First Mile

K-12



K-12 Information Technology Centers

Support centers for Ohio's elementary and secondary schools that provide fiscal services, electronic resources, library automation, information services, and Internet connectivity and email support.



Click below to explore OSCnet
Items that highlight can be toggled on and off



Public TV



Established, in part, to provide instructional broadcast programming and support services to Ohio school districts, as well as lifelong learning for all Ohioans.



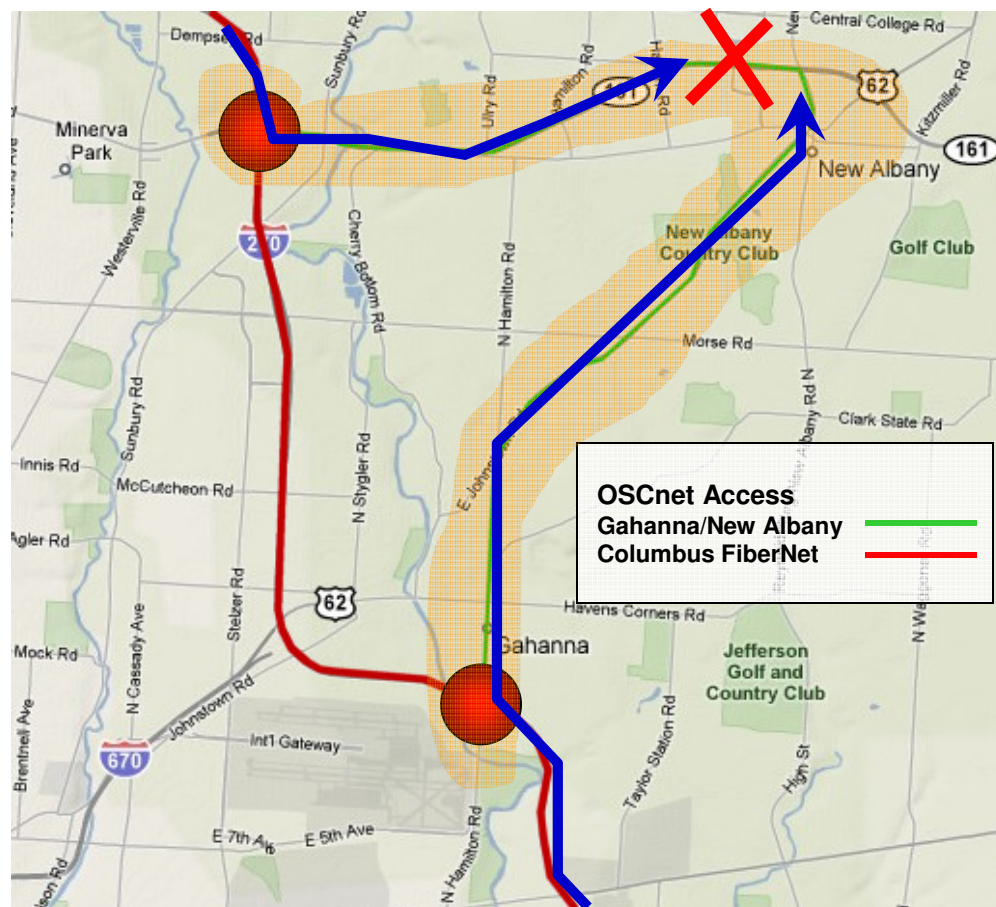
Click below to explore OSCnet
Items that highlight can be toggled on and off





Gahanna / New Albany Partnership

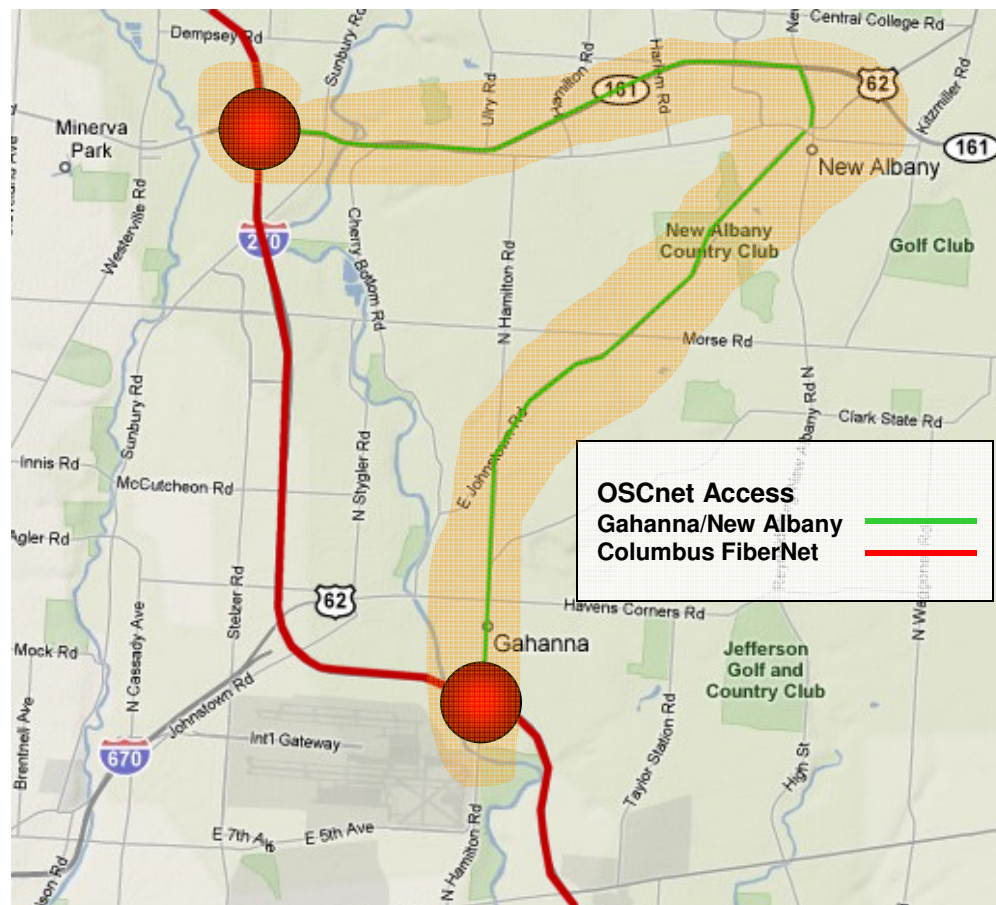
- Partnerships
 - New Albany and Gahanna
 - 2 points of access
 - CFN & OSCnet access
 - Self-healing network
 - Very high capacity
 - Very high availability
 - Very high reliability





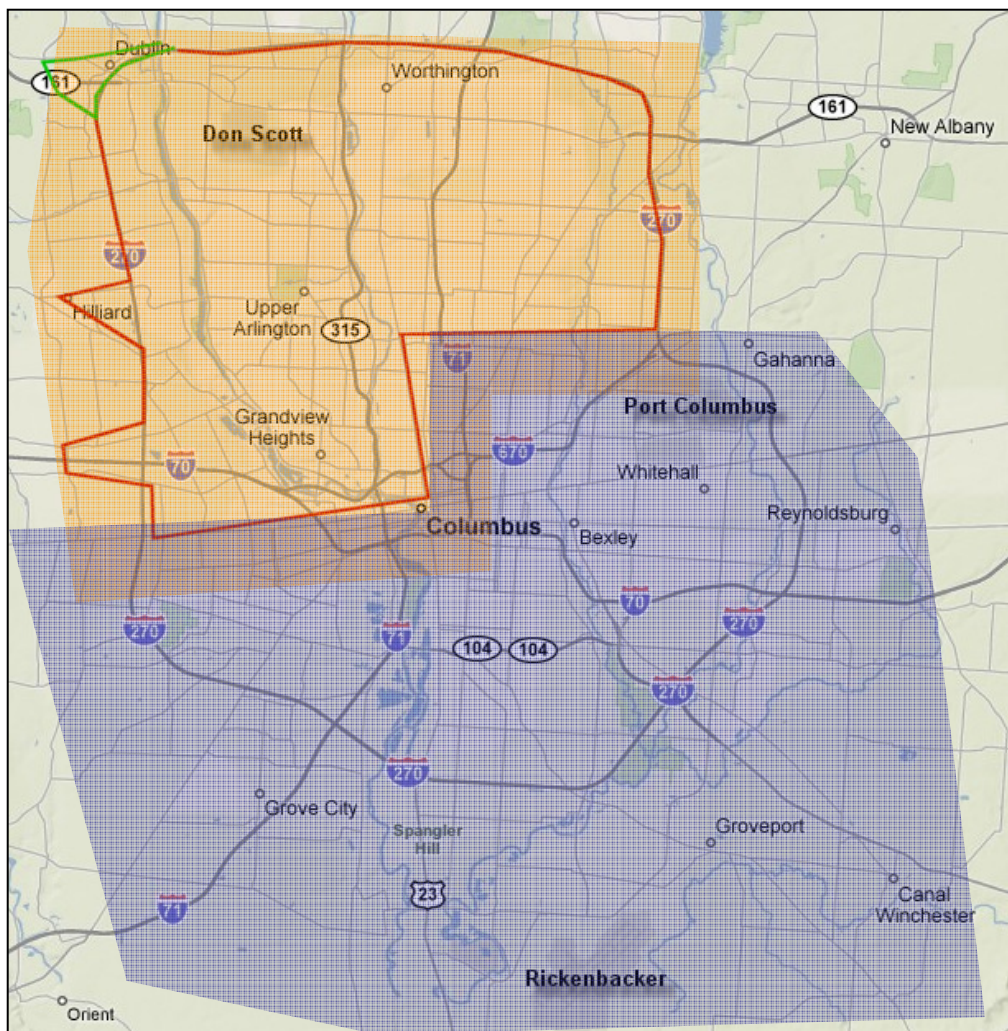
Gahanna - New Albany – Project Purpose

- Use Cases
 - Gahanna
 - Municipal applications
 - Automatic Meter Reading
 - New Albany
 - Economic Development
 - Business growth





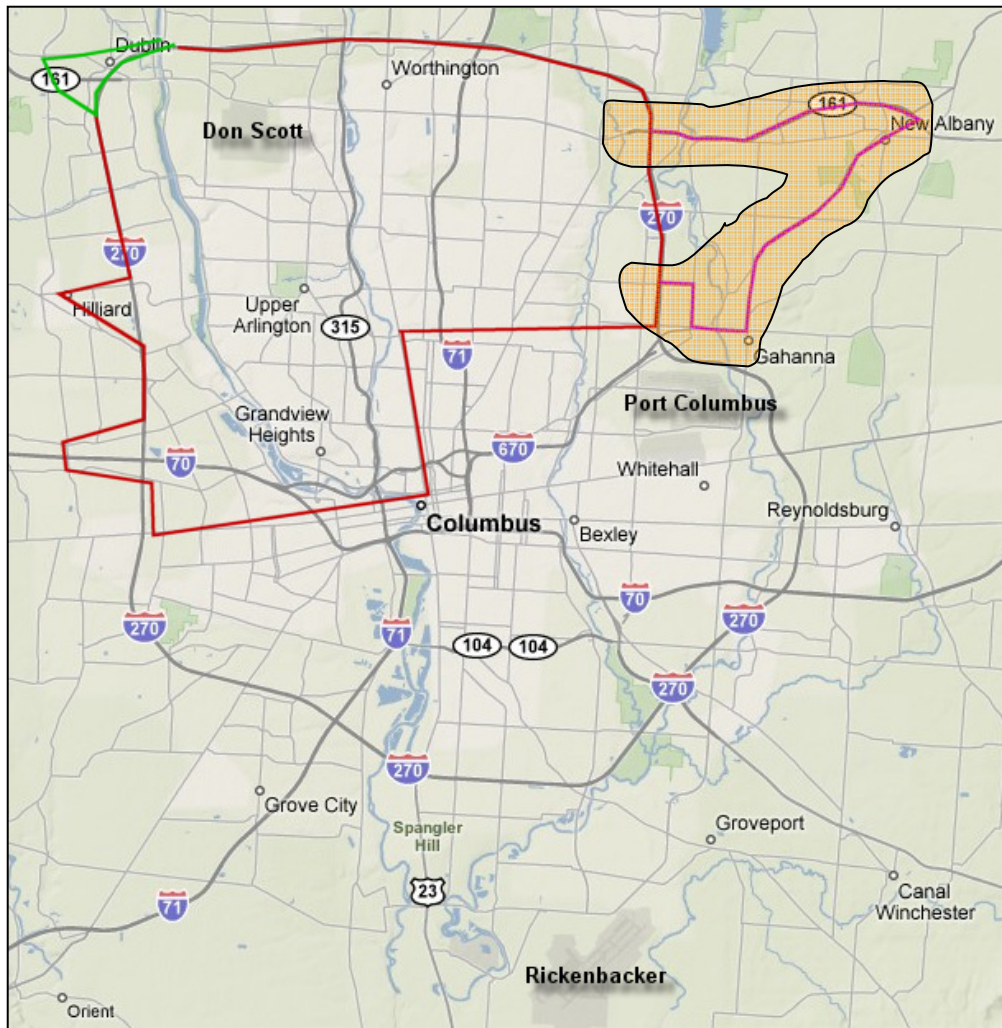
Central Ohio Broadband – Current



- Columbus Fibernet
 - 50% coverage
- Southeast, South and Southwest
 - remain unserved



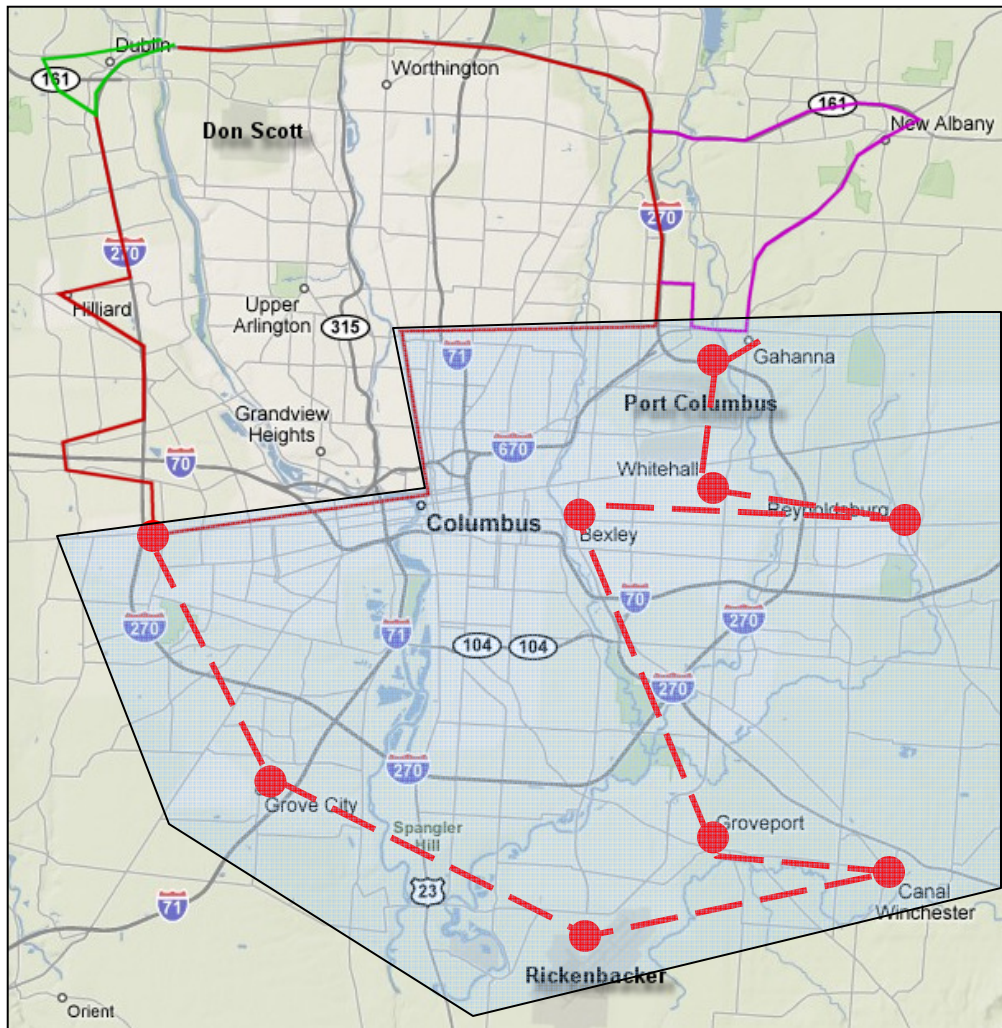
Central Ohio Broadband Expansion - 2008



- Growth
 - Gahanna
 - New Albany



Central Ohio Broadband Gaps – 2008

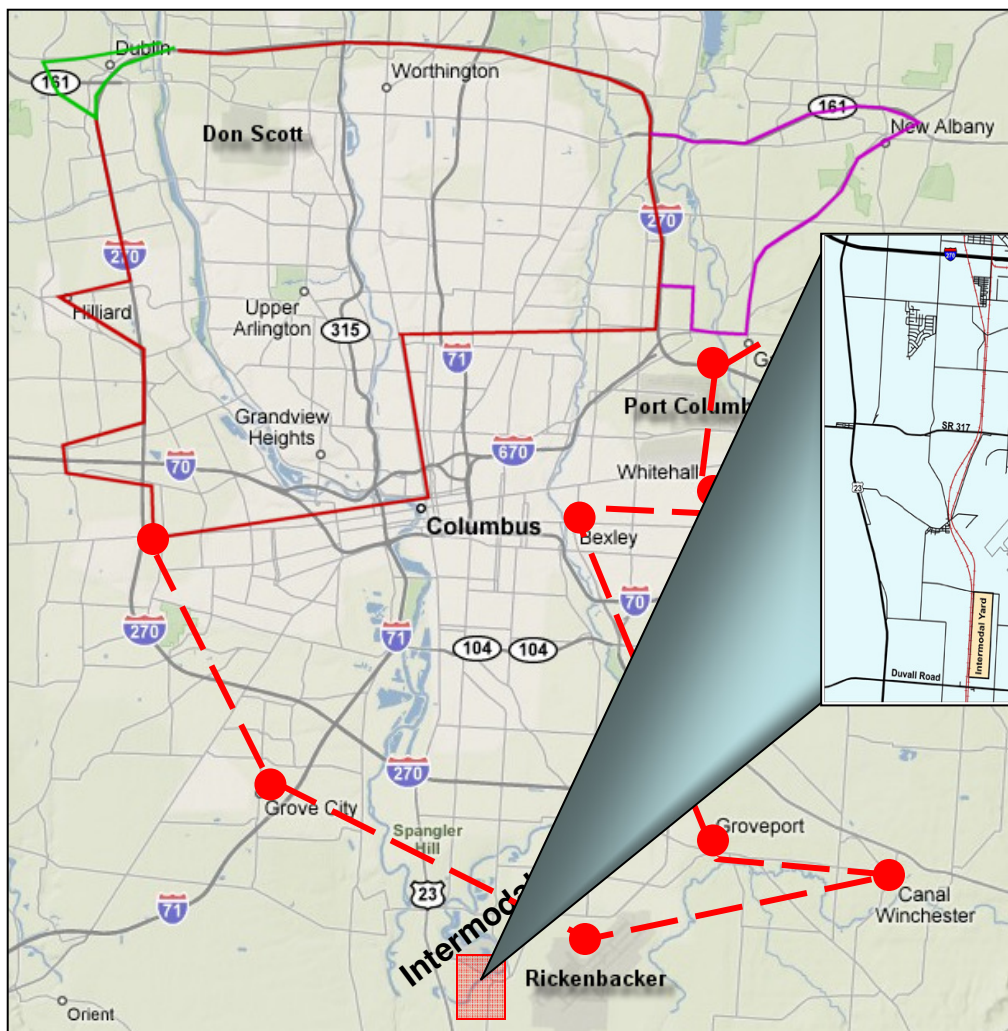


○ Gaps

- Port Columbus
- Whitehall
- Bexley
- Reynoldsburg
- Groveport
- Canal Winchester
- Rickenbacker
- Intermodal
- Grove City



Central Ohio Broadband Future

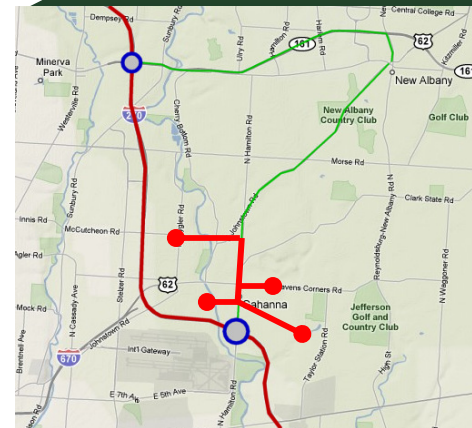
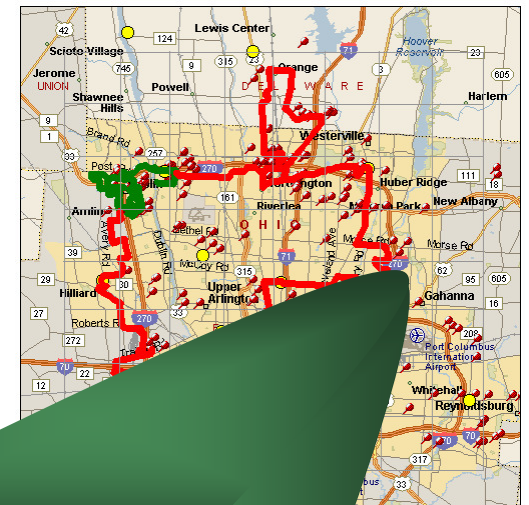


- Strategic Growth
 - Rickenbacker
 - Intermodal facility



Summary First – Middle – Last Mile

- State – 1st mile
- Regional – Middle mile
- Local – Last mile



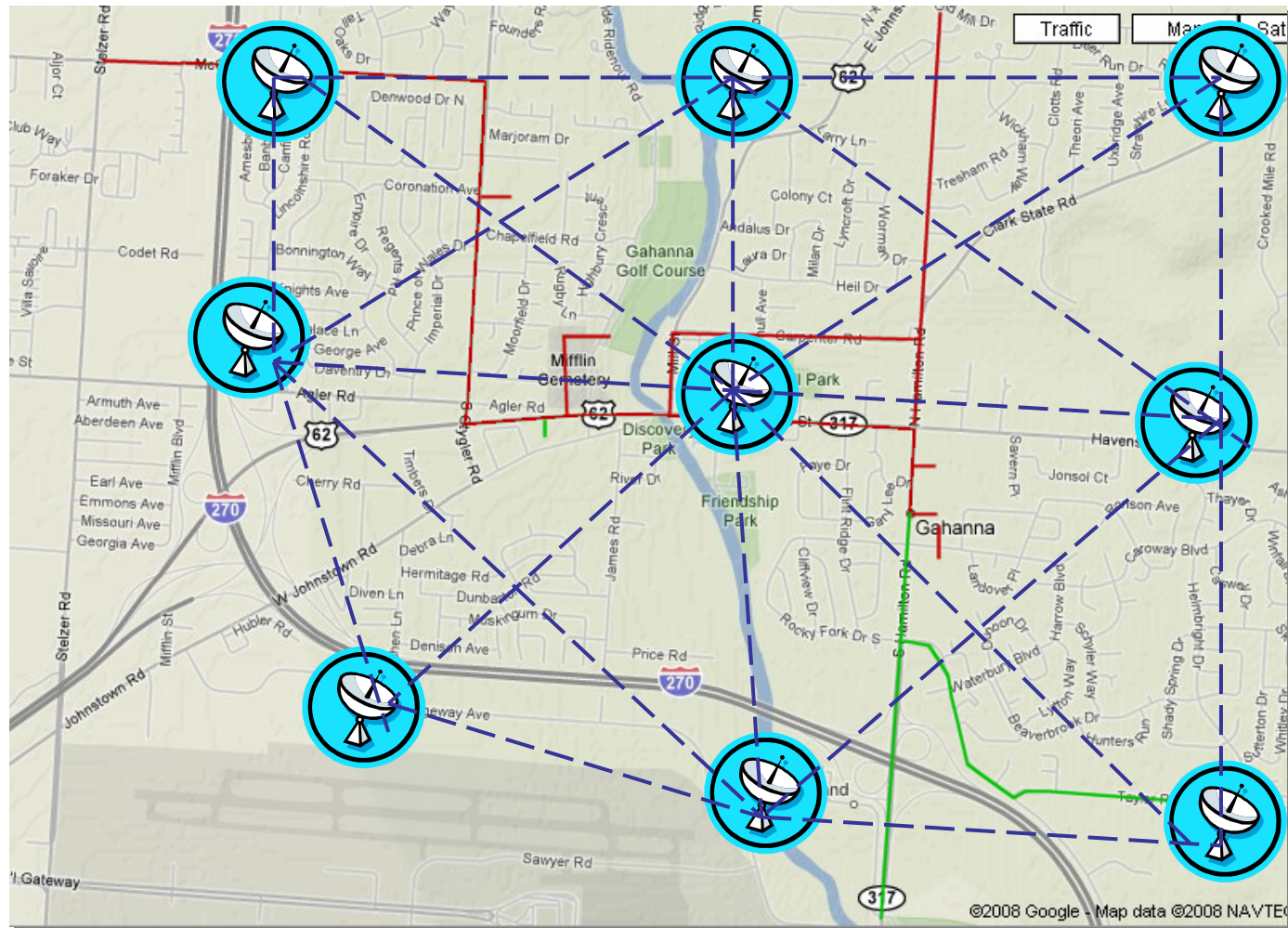


Gahanna WiFi

- What is WiFi?
 - A wireless, radio technology used to connect computers and other network-ready devices together into a network like a traditional wired network.



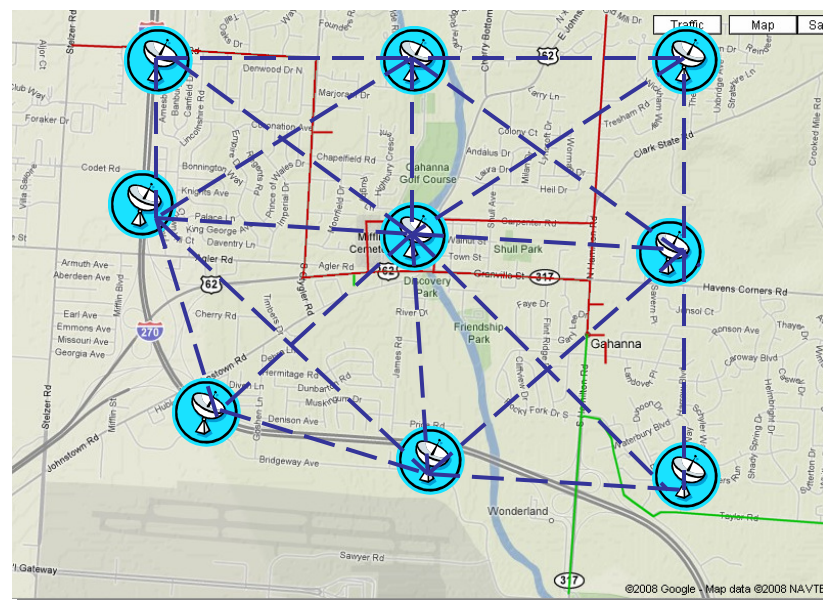
Gahanna WiFi





Gahanna WiFi

- Border-to-Border citywide coverage
- City is the anchor network tenant
- Provides for municipal mobile needs
- Subscription services available
- Includes 4.9Ghz safety service support
- Built for interoperability
- Caters to remote fixed and mobile users
- State of the art design

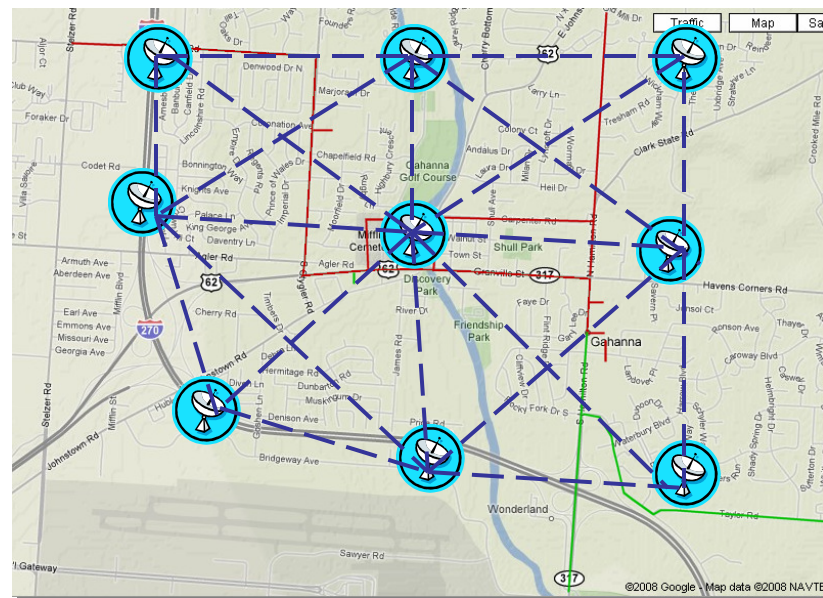




Gahanna WiFi

Other Details

- Border-to-border network
- 802.11 B/G network
- Fiber and mesh architecture
- Covers the entire city
- Alternative to dial-up, cable modem or DSL
- Data service only, no voice or cable service required to connect





T.I.D.E. Technology Collateral

Business by size and broadband needs

- Three basic groups
 - Small
 - Typically has less than 10 employees
 - Isn't a company that specifically requires broadband for competitive, product design or R&D reasons
 - Needs minimal bandwidth to support basic business functions
 - Medium
 - Greater than 10 employees
 - Requires greater broadband capacity to support business needs
 - Requires Metro-Ethernet, dedicated point-to-point circuits, or broadband speeds higher than 1 to 4 typical T1 lines
 - Large
 - Greater than 50 employees
 - Requires broadband for everyday business and R&D needs
 - Requires combinations of dedicated Metro-Ethernet, dedicated MPLS, SONET, Fiber Channel, or other technologies to compete and carry on day-to-day business



T.I.D.E. Technology Collateral

○ Broadband Needs

– Small business

- Typically only requires broadband Internet access
- Uses network for general business needs
 - Banking
 - Bookkeeping
 - Business data research
- WiFi or similar broadband service provider would typically satisfy the small business requirements



T.I.D.E. Technology Collateral

○ Broadband Needs

- Medium size business
 - Uses network for general business needs
 - Banking
 - Bookkeeping
 - Business data research
 - May do more global or international business supporting bandwidth-hungry applications
 - VoIP
 - Video conferencing and collaboration software support
 - CAD and other design software requiring data sharing
 - R&D functions requiring large file sharing
 - Multi-campus business center collaboration
 - Fiber may be required to connect multi-site business campus and may also require WiFi



T.I.D.E. Technology Collateral

○ Broadband Needs

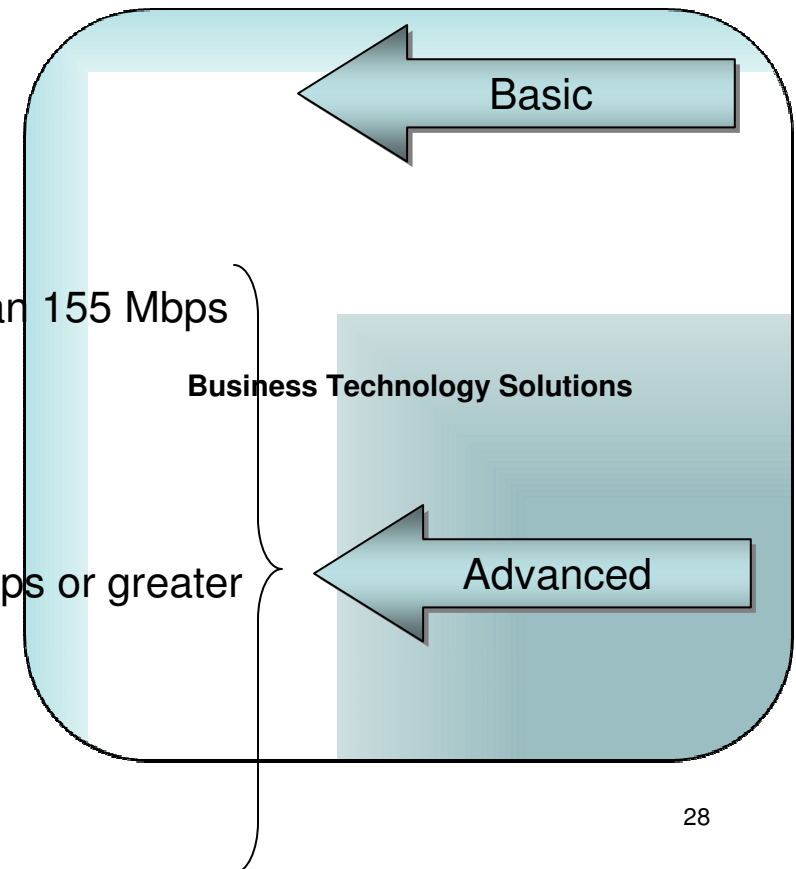
- Large business
 - Does more international business requiring bandwidth-hungry applications
 - VoIP
 - Video conferencing and collaboration software support
 - CAD and other design software requiring data sharing
 - R&D functions requiring large file sharing
 - Offsite, realtime data backup and storage
 - Distributed computing
 - Multi-campus business center collaboration
 - Fiber may be required to connect multi-site business campus and may also require WiFi



Broadband and Technology Menu

○ T.I.D.E. – Creating a business friendly technology environment

- WiFi
 - General broadband and Internet access
 - 50 Mbps or less
- Campus fiber – 155 Mbps or less
 - Point-to-point TDM or SONET
 - Metro-Ethernet – less than 100 Mbps
- Virtual fiber – Inside Gahanna – Greater than 155 Mbps
 - Point-to-point TDM or SONET
 - Protocol agnostic
 - Metro-Ethernet – 100 Mbps or less
 - Self-healing architecture
 - Self-healing
- Virtual fiber – Outside of Gahanna – 600 Mbps or greater
 - Columbus Fiber Net connection
 - Point-to-point TDM or SONET
 - Protocol agnostic
 - Metro-Ethernet – 100 Mbps or greater
 - Self-healing architecture
 - OSC computer time





T.I.D.E. Business Needs Assessment

- There isn't a "One size fits all" approach that works
- Programs will need to be customized to match business type, business needs and tax revenue potentials
- Business surveys are required to assess individual business broadband needs and technology program shaping and customization
- Conduct initial BizTech technology survey



Thank You